3-17-2000

Don't get caught in calcium confusion

University of Montana--Missoula. Office of University Relations

The University of Montana

UNIVERSITY RELATIONS • MISSOULA, MT 59812 • 406-243-2522 • FAX: 406-243-4520

NEWS TO USE

This release is available electronically on INN (News Net.)

March 17, 2000

Contact: Donna Beall, pharmacy practice assistant professor, (406) 243-6710 or -4237.

DON'T GET CAUGHT IN CALCIUM CONFUSION

By Terry Brenner
University Relations

Americans love to have choices in everything -- from politics and pizza to religion and recreation. But, as everyone knows, it's possible to get too much of a good thing. Too many choices can be more burden than blessing.

Take calcium supplements, for example. Your doctor didn't warn you about the megadose of choices you'd face at the pharmacy. And the "quick" stop you planned to make there, you soon realize, was a gross miscalculation of time.

You find shelves of calcium supplements. Twenty-five minutes later you're still poring over the large and small print on containers of calcium carbonate, citrate, phosphate, gluconate and lactate under a half-dozen or more brand names with various additives such as vitamin D, soy and zinc, and ranging widely in milligrams of calcium per pill.

Don't give up. Just make your next calcium-shopping trip simpler and faster by using these tips:

■ Look first for the compound's "elemental" calcium content, says doctor of pharmacy Donna Beall, a pharmacy practice assistant professor at The University of Montana. If elemental calcium isn't itemized but the container states, for example, calcium 600 mg, that is the amount of elemental calcium. If it says calcium as calcium carbonate 600 mg, the elemental

calcium is about 240 mg.

Calcium carbonate products are about 40 percent elemental calcium. Calcium citrates are 21 percent elemental calcium, and calcium phosphate products are 38 percent.

Beall says people always want to know which calcium compound is best. The answer, she says, is "the one that meets an individual's needs based on tolerance, convenience, cost and availability." Calcium carbonate supplies the most calcium per tablet, though, and thus cuts down on the number of tablets needed.

■ Make sure the product label says "confirmed release" or has the official USP -- U.S. Pharmacopeia -- seal of approval.

"This is the standard U.S. companies go by to meet quality, potency and dissolution requirements," Beall says. "When you get the generic calcium carbonate, sometimes it doesn't dissolve, and you can actually see the tablet in the feces." Just because a company puts 500 milligrams in the tablet doesn't mean 500 milligrams will be absorbed, she says. A test you can do is put the tablet into a bowl of water and wait 30 minutes. If it doesn't dissolve, it's probably not going to dissolve in your body.

■ Buy a tablet that includes vitamin D. The body needs vitamin D in order to absorb calcium.

"Vitamin D is the key that unlocks the door and allows calcium to leave the intestine and enter the bloodstream," Beall says. "It also works in the kidneys to help resorb calcium that otherwise would be excreted." The two main sources of vitamin D, besides a supplement, are diet -- foods such as vitamin-D fortified dairy products, egg yolks, saltwater fish and liver -- and exposure to sunlight.

The skin manufactures vitamin D following direct exposure to sunlight, but just how

much depends on time of day, season, latitude and skin pigmentation, Beall says. Usually 10 to 15 minutes' exposure of hands, arms and face two to three times a week, depending on one's skin sensitivity, is enough to satisfy the body's vitamin D requirement. The fairer your skin, the more vitamin D you make. As you age, your ability to make vitamin D through the skin decreases, and housebound people who get no exposure to the sun make no vitamin D.

Before you decide how much calcium and vitamin D you need as supplements, use the following approximations to figure out how much you already get from your diet.

Figure that the nondairy foods you eat provide about 250 mg of calcium a day. One exception is calcium-fortified orange juice, which provides about 300 mg per cup. Every 8 ounces of milk you drink provides 300 mg calcium and 100 international units of vitamin D. A cup of yogurt or a 2-ounce piece of cheese also provides 300 mg calcium. Most multivitamins provide 400 IU vitamin D.

Now consider your total dietary intake of calcium and vitamin D in light of these age and gender requirements: Children ages 1-5 need 800 mg elemental calcium and 400 IU vitamin D daily. Children 6 to 10 need 800-1200 mg calcium and 400 IU vitamin D daily. For adolescents and young adults 11-24, it's 1200-1500 mg calcium and 400 IU vitamin D. Adult men 25-64 need 1000 mg calcium; men over 65, 1500 mg calcium. Vitamin D needs for adult men range from 400 to 800 IU.

Because women have smaller bones than men, bear and breast-feed children and go through menopause, their calcium and vitamin D requirements differ from those for men. Women ages 25-50 need 1200 mg calcium and 400 IU vitamin D; pregnant and nursing women, 1200-1500 mg and 400 IU; postmenopausal women on hormone replacement therapy, 1200 mg calcium and 400 IU vitamin D; postmenopausal women not on HRT and women over

65, 1500 mg and 800 IU. Vitamin D is fat soluble, which means excess amounts are stored in the body tissue, not excreted in the urine. Avoid doses above 800-1000 IU unless prescribed by your doctor, because excess vitamin D can be toxic.

If you need to supplement with more than 500 milligrams of calcium a day, spread your intake out through the day, Beall says. The body can absorb only so much calcium at a time. Caffeine can reduce absorption even further, so limit your caffeine intake to fewer than five cups a day.

It doesn't matter all that much when you take your calcium, although calcium carbonate products are absorbed slightly better when taken with a meal or shortly after. Some foods inhibit calcium absorption, though. If you're eating a meal rich in wheat bran, soybeans or legumes, take your calcium supplement at a different time.

All of this is important because your body uses calcium to keep your bones, heart and muscles healthy. If you're not taking in enough calcium, your body will take the calcium it needs out of your bones, making you a candidate for weakened bones, increased risk of fractures and osteoporosis.

Even so, you don't need to obsess about getting exactly what you need every day, Beall says.

"It's not like every day your body needs exactly one thousand milligrams of calcium," she says. "It's over a period of, say, a week. You can have more one day and less another as long as you get it in over a period of time."

###

TB
Calcium.NTU
Dailies, weeklies